APPENDIX A

EMERGENCY RESPONSE PLAN FOR AMMONIA RELEASE

1.0 EMERGENCY RESPONSE PLAN: This emergency response plan has been developed for the Stavis Seafood Company under SARA and OSHA requirements.

1.1 PRE-EMERGENCY PLANNING AND COORDINATION WITH OUTSIDE PARTIES

1.1.1 Scope: Relative to 29 CFR 1910.120(q) (2) (i)-(xi) , this emergency response plan has been developed to cover only uncontrolled releases of anhydrous ammonia refrigerant. Our HAZMAT team is not authorized, trained, or equipped to handle any other hazmat situations. In such cases, the entire plant including the Refrigeration HAZMAT Team will evacuate under section 3 of this plan, and the Boston Fire Department's HAZMAT UNIT will respond to the hazmat call.

1.1.2 Site and Facility Description:

a. Location: A 35,000 sq ft industrial site located at 7 Channel Street in the Boston MA.
b. Hazards: Anhydrous Ammonia
c. Occupancy: Industrial, a seafood processing plant and storage
d. Environmental: Boston harbor.
e. Area Affected: The refrigeration unit located along the southern side of the building.
f. Surrounding Industrial Park
g. Topography: Flat terrain
h. Weather: Precipitation will produce aqueous ammonia; wind direction must be noted. There is a wind sock over the main plant

1.1.3 Interaction with the SERC and LEPC Plans:

a. This plan is compatible with the Commonwealth of Massachusetts, County of Suffolk, and Boston emergency response plans.
b. All chemicals covered in the plant hazard communication (right-to-know) program have been reported to the Massachusetts Department of Environmental Resources to fulfill SARA Title III requirements.

1.1.4 Coordination with outside Parties:

a. Federal Agencies:
(1) Any work-related employee fatalities or catastrophes must be reported to the local OSHA office within 48 hours of their occurrence:
U.S. Department of Labor -OSHA
JFK Federal Building, Room E340
Boston, Massachusetts 02203
(617) 565-9860
(617) 565-9827 FAX

(2) Any release of anhydrous ammonia or other hazardous chemical into the outside

air or any sewer, waterway, or groundwater must be reported immediately to the EPA:

U.S. Environmental Protection Agency Hazardous Waste Branch
5 Post Office Square - Suite 100
Boston, MA 02109-3912
1-888-372-7341

b. State Agencies:
(1) Any release of anhydrous ammonia or other hazardous chemical into the outside air or any sewer, waterway, or groundwater must be reported immediately to the Massachusetts Department of Environmental Protection.
1 Winter Street
Boston Ma 02108
617-292-5500

c. City/County Agencies:
(1) Boston Emergency Management Agency.
1 City Hall Square, Room 204
Boston, MA 02201-2015
Telephone: 617.635.1400
e. Contractors:
(1) American Refrigeration Service, Inc.
149 River Street
Andover, MA 01810
Toll Free: 888-388-1120
Local: 978-474-4000
Fax: 978-474-4001

1.2 **PERSONNEL ROLES, LINES OF AUTHORITY, TRAINING AND COMMUNICATION**

1.2.1 Onsite Organization, Lines of Authority and Coordination:
The following job titles are designated to carry out the stated job functions on site. If one of the following job titles is unavailable, then he or she must designate another person or job title to carry out those assigned functions before he or she becomes unavailable or not represented on the plant emergency response team. In the event of an uncontrolled release of anhydrous ammonia from the plant's primary and/or secondary refrigeration systems, the operations manager will initiate the incident command system (ICS) and insure an orderly evacuation of plant. Before reentry, the operations manager shall insure that it is safe to do so.

a. VP OF OPERATIONS / OPERATIONS MANAGER: Responsible for all compliance requirements whether taken on, delegated, or disregarded.

b. **INCIDENT COMMANDER:** This is the highest ranking individual on site at time of incident. He is exclusively responsible for managing the incident to a successful conclusion, supervising the response team.

c. **INCIDENT SAFETY OFFICER:** He serves in the staff function of site safety and health officer. He advises the operations manager and incident commander on all areas of employee and public safety and health.

d**. INCIDENT INFORMATION OFFICER:** He directs communication to the press and employees.. He serves in a staff function under the operations manager to assist the incident commander as necessary. He also serves as the incident record keeper logging all arrivals and departures at the site.

e. **INCIDENT SCRIBE:** Records all activities and maintains logs of the incident. To be designated by Incident Commander at time of incident.

f. **INCIDENT RESPONSE TEAM:** This is the shift refrigeration supervisor and /or his designee. He is responsible for managing the HAZMAT OPERATION. He reports directly to the operations manager and incident commander.

g. **FINANCIAL OFFICER:** Keeps record of all costs related to incident.

h. **INCIDENT TEAM MEMBERS:** These are members of the American Refrigeration Company technical and operational staff. Stavis refrigeration employees work in conjunction with American refrigeration.
In the case of an anhydrous ammonia leak or spill, the emergency response team will perform the following:
(1) Sound the gas alarm; notify the plant manager and plant security.
(2) Affect the immediate shutdown of the plant primary and/or secondary refrigeration systems.
(3) Find the source{s) of the leak.
(4) Repair faulty equipment.
(5) Retest for leaks.
(6) Restart the refrigeration system.

1.2.2 Training:
a. The following training categories and subject areas will be given to the following employees:

(1) **Level 1- First Responder (Awareness) Level:**
All plant employees will be trained at this level.Annual refresher training will cover a review of this plan and any
hazards specific to each employee's duties. Written documentation of initial and annual training will be maintained by the plant personnel director for each plant employee. In these records, the plant safety director will certify the initial and annual training for each employee. All first responder training will be provided in house under the direction of the plant safety director. All plant employees must successfully complete this training; it may not be grand fathered or waived.

The content of the first responder (awareness) level training will include all of the following:
* Hazard communication training to meet or exceed the requirements of OSHA's Chemical Hazard Communication Standard, 29 CFR 1910.1200.
* Training in the purpose, content, and implementation of this emergency response plan.
* Ability to recognize abnormal and/or hazardous conditions that need to be reported to one's supervisor or others in authority.
* Under 29 CFR 1910.120(q) (6) (i) the following competencies must be demonstrated upon completion of this training:
(a) An understanding of what hazardous substances are, and the risks associated with them in an incident.
(b) An understanding of the potential outcomes associated with an emergency created when hazardous substances are present.
(c) The ability to recognize the presence of hazardous substances in an emergency.
(d) The ability to identify hazardous substances, if possible.
(e) An understanding of the role of the first awareness individual in the company's emergency response plan including the site security and control and the use of the U. S. Department of Transportation's **Emergency Response Guidebook.**
(f) The ability to realize the need for additional resources, and to make appropriate notifications to the communications center.
Each employee must pass a test that demonstrates mastery of these areas before the Plant Safety Manager certifies his or her competence.

2. **Level 2 - First Responder (Operations) Level:**
No plant personnel will be trained at this level.
The requirements for this level can be found in 29 CFR 1910.120(q) (6) *(ii)* .

3. **Level 3 - HAZMAT Technician:**
Currently there are three employee's trained at this level.
The requirements for this level can be found in 29 CFR 1910.120(q) (6) *(iii)* .

4. **Level 4 – HAZMAT Specialist:**
All employees in the refrigeration company personnel will be trained at this level. Initial training will be at least 24 hours in duration. Annual refresher training will be 8 hour long.
The content of the HAZMAT specialist training will include all of the following:
* A thorough understanding of all chemical, physical, and biological hazards present or anticipated at the plant.
* The understanding and ability to perform specialized containment operations.
* The theory, use, and limitations of personal protective equipment (ppe) .
* An understanding of and the ability to use decontamination procedures.
* Intrinsic safety, confined space and ventilation procedures.
* An operational understanding of the incident command system (ICS) .
* An operational understanding of system safety and process leak abatement

* **A firm understanding that their HAZMAT specialist training is strictly limited to anhydrous ammonia leaks or spills and malfunctions in the plant refrigeration system.**
* Under 29 CFR 1910.120(q) (6) (iv) the following competencies must be demonstrated upon completion of training:
(a) Know how to implement the local emergency response plan.
(b) Understand classification, identification, and verification of known and unknown materials by using advanced survey instruments and equipment.
(c) Know the state emergency plan.
(d) Be able to select and use proper specialized equipment provided to the hazardous materials specialist.
(e) Understand in-depth hazard and risk techniques.
(f) Be able to perform specialized control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available.
(g) Be able to determine and implement decontamination procedures.
(h) Have the ability to develop a site safety and control plan.
(i) Understand chemical, radiological, and technological terminology and behavior.
Each HAZMAT Specialist must pass a test that demonstrates mastery of these areas before the Plant Safety Director certifies his or her competence.

5. **Level 5 - HAZMAT Incident commander:**
The Vice President, operations manager, plant engineer, and all refrigeration company responders will be trained at this level. The initial training will be at least 24 hours in duration. Annual refresher training will be 8 hours in duration. Anyone who meets level 5 training requirements t h r o ugh grand fathering or previous work experience, must still receive site-specific training relative to this plan. Written documentation of initial and annual training will be maintained by the plant personnel director.
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1.3 EMERGENCY RECOGNITION AND PREVENTION

1.3.1 Hazard Evaluation:

a. The anhydrous ammonia used in the plant's mechanical refrigeration system is the only chemical used in the plant whose leak, spill, or uncontrolled release would trigger a HAZMAT emergency response action.

b. The concentrations and hazards of anhydrous ammonia exposure are presented in section xx

c. Normally anhydrous ammonia is not a fire or explosion hazard. If, however, this gas does ignite, do not attempt to put the fire out unless you can stop the leak or flow of gas. Between the LEL and VEL anhydrous ammonia gas can ignite or explode, particularly in the confines of a room or small space with inadequate ventilation. Our plant's refrigeration department has been designed with intrinsically safe electrical equipment and an automatic ventilation system to maintain any escaping anhydrous ammonia concentration in the refrigeration rooms below the

LEL. In the unlikely event of ventilation failure (e.g. loss of commercial and auxiliary electrical power) or inadequate ventilation, the LEL may be exceeded. A warning alarm will automatically sound in the event of a ventilation system failure. This alarm has backup battery power. However for good safety practice, a combustible gas meter must be used in all anhydrous ammonia incidents.

d. A copy of the plant's written hazard communication program is maintained and available for reference in the safety office. Copies of all MSDS's are also maintained in the safety office. A copy of the MSDS for anhydrous ammonia is Appendix C to this emergency response plan.

1.3.2 Emergency Response: Any uncontrolled release of anhydrous ammonia gas or liquid will activate the plant's gas alarm and trigger a HAZMAT emergency response. Upon sounding the gas alarm, all plant employees will evacuate following the emergency action plan found in section 3 of this plan.
Only the HAZMAT team will reenter to stop the leak, ventilate the area affected, and repair the refrigeration system if possible.
An **uncontrolled release** of anhydrous ammonia is one that either sets off the automatic gas alarm or results from a maintenance function that cannot be handled safely by employees in the immediate work area.
A controlled or incidental release of anhydrous ammonia is one that results in a small spill or leak which can be handled safely by employees in the immediate area. If the release is sufficient to trigger the gas alarm or necessitate organized assistance from outside the immediate work area, then it is not a controlled or incidental release.
4.3.3 Hazardous Materials Incidents: Under this plan there are no hazardous materials incidents outside the scope of a HAZMAT emergency response to an anhydrous ammonia leak, spill, or mishap.

1.4 SAFE DISTANCES AND PLACES OF REFUGE

4.4.1 Site Map: Appendix A-1 presents the facility map. This figure indicates the direction north, the
location of all buildings, structures, equipment, emergency apparatus, first aid stations, routes of entry and exit, staging areas, and traffic control.
a. In an incident the incident commander must determine the prevailing wind direction, evaluate the situation, and overlay **Appendix A-1** with the following as necessary:
(1) Location of key personnel
(2) Location of key apparatus
(3) Location of the command post
(4) Location of the staging area
(5) Location of additional evacuation staging areas
(6) Location of the medical support area
(7) Location of transportation routes
(8) Locations of the Exclusion Zone, Contamination Reduction Zone and Support Zone
4.4.2 Places of Refuge : Section 1.4 of this plan and Appendix B list all places of refuge.

1.5 SITE SECURITY AND CONTROL

1.5.1 The plant security manager or the senior manager on duty will coordinate access, control, and security at the plant in an HAZMAT emergency response incident or scenario.
1.5.2 The Exclusion Zone will encompass the entire refrigeration department.
The contamination Reduction Zone will encompass the main plant building except for the refrigeration department.
The Support Zone will encompass all the rest of the site.

1.5.3 The driveway between Channel St and Harbor St at the main entrance to the plant will be the command post unless another location is chosen.
The staging areas will be Channel St by the fence line for the trailer storage area in front of the main plant building and the parking lot at the parking lot between Channel St and Drydock Ave,

1.6 **EVACUATION ROUTES AND PROCEDURES**

1.6.1 Emergency Procedures for General Facility Employees: Section 3 of this plan, the emergency action plan, covers these procedures.

1.6.2 Emergency Procedures for HAZMAT Emergency Responders: The following guidance in conjunction with section 3 of this plan will constitute the standard emergency procedures for all HAZMAT emergency responders.

a. Fires/non HAZMAT Emergencies: All HAZMAT team members will evacuate under Section 3 guidelines. Team members will **not** participate in any non anhydrous ammonia incidents.
d. Alternate Evacuation Routes: Alternate evacuation routes need to be designated for those situations where egress from the contaminated or involved area cannot occur safely.

1.6.3 Reentry: In all situations, where an outside emergency results in evacuation of the exclusion zone, personnel shall not reenter until:
a. The condition resulting in the emergency has been corrected.
b. The hazards have been reassessed and are manageable.
c. The site safety plan has been reviewed and revised if necessary.
d. HAZMAT personnel have been fully briefed on any changes.

1.7 **DECONTAMINATION**

1.7.1 Procedures: Decontamination for anhydrous ammonia is not required under normal conditions. Normal conditions prevail when the anhydrous ammonia is in the gas phase. In the liquid phase, anhydrous ammonia is extremely hazardous to the unprotected eye and skin.

1.7.2 Emergency Procedures: In the event of a ppe failure, retire to the contamination reduction zone as soon as possible. For eye contact, use the eye wash station; for skin contact use the deluge shower after doffing the level B protection.

1.7.3. Required Equipment: A whole body deluge shower and continuous dual stream eye wash station are necessary for emergency decontamination only.

1.8 **EMERGENCY MEDICAL TREATMENT AND FIRST AID**

1.8.1 Emergency Medical Care:
When the 911 call is initiated to the Boston Fire Department, a critical care ambulance and fire department paramedics will be dispatched to back up plant personnel and provide emergency transportation to Boston Area Hospitals.The following onsite first aid equipment is available in the refrigeration department:
First Aid Kit
Emergency Eye Wash station
Emergency Shower

Anhydrous ammonia is an acute inhalation, skin, and eye hazard.

a. Inhalation: Remove the affected person from the source of exposure. If not breathing, ensure open airway and institute cardiopulmonary resuscitation (CPR). If breathing if difficult, administer oxygen. Keep affected person warm and at rest. Get immediate medical attention.

b. Eye Contact: Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get medical attention as soon as possible.

c. Skin Contact: Wash area of contact thoroughly with soap and water. Remove contaminated clothing immediately. Launder clothing before reuse. Get medical attention if irritation persists. Contact with liquefied gas may cause frostbite. Get immediate medical attention.

1.8.2 List of Emergency Telephone Numbers:
Police: 911
Fire: 911
Ambulance: 911

1.8.3 Emergency Medical Procedures:
a. Personnel Injured in contaminated Areas: HAZMAT team members will remove the injured person to one of the first aid stations outside the refrigeration department entry ways. The team leader and plant safety director shall evaluate the nature of the injury. The onsite manager shall initiate the appropriate first aid, and remove the injured person to the awaiting ambulance, if necessary.

b. Personnel Injured in Other Areas: Upon notification of an injury in the support or containment reduction zones, the team leader and plant safety director will assess the nature of the injury. The onsite manager will initiate the appropriate first aid and necessary follow-up procedures. The injured will be transported by fire department ambulance to Boston Area Hospital, if necessary.

1.9 **EMERGENCY ALERTING AND RESPONSE PROCEDURES**

Releases of anhydrous ammonia will be signaled by the sounding of the plant gas alarm. See section 2.1.4. Communications and emergency reporting particulars are discussed in section 4.2.3 and 3.1 respectively.

1.10 **CRITIQUE OF RESPONSE AND FOLLOW-UP**

1.10.1 Drills: All practice and training drills of the HAZMAT team must be critiqued in writing.

1.10.2 Actual Incidents: All HAZMAT incidents must be critiqued in writing.

1.10.3 Content of the Critique: After each drill and actual incident involving anhydrous ammonia, the incident commander and/or operations manager must write, sign, and date a comprehensive critique within 48 hours. This critique must discuss in detail the high points, low points, successes and failures encountered. The summary paragraph must state clearly any changes or improvements needed in this plan and plant operating procedures.

1.11 **PERSONAL PROTECTIVE AND EMERGENCY EQUIPMENT**

1.11.1 Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks:
Location Job Function Level of Protection
Contaminated HAZMAT Team B/A Area
Decontamination HAZMAT Team B
Area HAZMAT Team Members B
HAZMAT Paramedics B
Support Area Incident Commander D
Safety Manager D
Operations Manager D
Boston Firefighters (As designated by Commanding Officer on Scene)

1.11.2 Specific Protective Equipment for each level of protection is as follows:

a. **Level B Protection:**
Positive pressure SCBA with composite cylinder
Tyvek/Saranex 23-P disposable full-body OSHA Response Suit
Duct tape
Neoprene chemical safety boots
Latex examination glove (inner)
Butyl rubber outer gloves

b. **Level D Protection:**
Hard Hat
Safety Glasses or Monogoggles
Hearing Protection
*Half Face Respirator with Composite cartridges Work Uniform

*Butyl Rubber Gloves
Safety Shoes or Chemical Safety Boots
The * denotes optional ppe.

c. **Level T Protection:**
To be determined by the fire officer in charge
NO CHANGE TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE PLANT SAFETY MANAGER AND THE INCIDENT COMMANDER.

1.11.3 Limitations of the Personal Protective Equipment and Human Performance:

a. **Contact lens must never be worn where there is the potential for ammonia exposure to the eye.** This is why insert safety glasses are specified for SCBA users whenever they need corrective lenses to perform job tasks. Prescription safety glasses or monogoggles must be worn by non SCBA users exposed or potentially exposed to ammonia.

b. SCBA units have a nominal time rating for breathing air in the bottle of 30 minutes. Air is used going to and returning from the Exclusion Zone. The metabolic load varies from person to person. **Therefore, never remain in the contaminated areas breathing air more than 15 minutes.**
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c. The Tyvek/Saranex 23-P material used in the single use disposable OSHA response suits has a break through time of 19 minutes for exposure to anhydrous ammonia. Therefore, **never remain exposed to anhydrous ammonia for more than 15 minutes.** If more time is needed to stop the leak and affect repairs, then a second team must enter or the first team must retire to the decontamination area. There they will don fresh suits and replace the SCBA bottles before reentry.

d. Neither levels B nor D provide heat, fire, or explosion protection. **Therefore, never enter a contaminated area if the anhydrous ammonia concentrations are at or between the LEL and UEL.** Defensive tactics only will be used until the area is adequately ventilated below the LEL.

e. Functioning in Level B protection places a tremendous heat load on the team members. Before donning ppe the following vital signs will be measured and recorded:
(1) Oral Temperature
(2) Blood Pressure
(3) Pulse
If any of these values are outside acceptable limits relative to each team member's normal values, then that team member will be excluded from entry into the Exclusion Zone.

1.11.4 Transportation, Distribution, and Location of Personal Protective and Emergency Equipment and Apparatus:
Figure A-1 notes the location of all HAZMAT ppe, fire extinguishers, and fire hose/standpipes.

1.11.5 Maintenance and Certification of all Personal Protective and Emergency Equipment and Apparatus:

a. The plant safety manager and incident commander are designated to service, maintain, and certify all ppe, emergency equipment, and apparatus used in this plan.

b. Complete and proper records of ppe fit testing (if necessary), maintenance and certification for emergency; and fire fighting equipment shall be maintained by the plant safety manager.

c. The operations manager, plant safety manager, and incident commander must be continually updated on the availability and readiness of all PPE, emergency equipment, and apparatus. Contingency plans must be developed immediately if key PPE, emergency equipment, or apparatus is unavailable or temporarily out of service.

4.12 **APPROVALS**

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CEO Date

_____ _____

Vice President Date

_____ _____

Operations Manager Date

_____ _____

Safety Manager Date